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(54)	SYSTEM AND METHOD FOR
` ′	VERIFICATION OF REMOTE SPARES IN A
	COMMUNICATIONS NETWORK WHEN A
	NETWORK OUTAGE OCCURS

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(56) References Cited

U.S. PATENT DOCUMENTS

5,058,105 A	*	10/1991	Mansour et al 370/228
5,146,452 A	*	9/1992	Pekarske 370/218
5,412,376 A	+	5/1995	Chujo et al 340/2.1
5,495,471 A	*	2/1996	Chow et al 370/221
5,537,532 A	٠	7/1996	Chng et al 714/4
5,706,276 A	+	1/1998	Arslan et al 340/2.2
5,748,098 A	*	5/1998	Grace 340/3.41
5,751,933 A	*	5/1998	Dev et al 714/4

5,761,429 A	• 6/1998	Thompson 709/224
5,777,549 A	* 7/1998	Arrowsmith et al 340/506
5,781,535 A	* 7/1998	Russ et al 370/248
5,793,760 A	• 8/1998	Chopping 370/355
5,796,718 A	* 8/1998	Caterisano 370/217
5,809,286 A	• 9/1998	McLain, Jr. et al 703/23
5,845,081 A	* 12/1998	Rangarajan et al 709/224
5,859,959 A	• 1/1999	Kimball et al 370/216
5,887,127 A	* 3/1999	Saito et al 714/4
5,896,440 A	4/1999	Reed et al 379/1
5,920,257 A	• 7/1999	Commerford 340/506
5,920,542 A	* 7/1999	Henderson 370/217
5,937,036 A	• 8/1999	Dean et al 379/44
5,937,042 A	* 8/1999	Sofman 379/113
5,941,955 A	• 8/1999	Wilby et al 709/242
5,943,321 A	* 8/1999	St-Hilaire et al 370/259
5,991,263 A	• 11/1999	Bales et al 370/225
5,991,814 A	* 11/1999	Rzonca et al 709/237
5,996,001 A	* 11/1999	Quarles et al 709/203
6,011,780 A	* 1/2000	Vaman et al 370/237
6,012,150 A	* 1/2000	Bartfai et al 714/4
6,014,567 A	* 1/2000	Budka 455/422

(List continued on next page.)

OTHER PUBLICATIONS

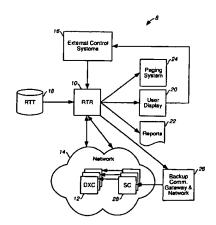
Stevens, "TCP/IP Illustrated, vol. 1", Addison-Wesley pp. 359-362 & 373, 1994.*

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(57) ABSTRACT

A system and method are disclosed for verifying spare capacity in a communications network comprising a database containing the configuration of switching elements within the network and a plurality of instructions resident on a memory device for operating a control computer, wherein the plurality of instructions includes a code segment for generating alarms on the switching elements, a code segment for receiving the alarms from the switching elements, and a code segment for updating the database to reflect the spare capacity based upon the alarms.

21 Claims, 13 Drawing Sheets



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U.S. PATENT	DOCUMENTS			Ayanoglu et al 714/57
6,032,203 A • 2/2000 6,044,075 A • 3/2000 6,047,331 A • 4/2000 6,049,523 A • 4/2000 6,057,757 A • 5/2000 6,108,300 A • 8/2000 6,112,015 A • 8/2000	Croslin 379/221 Heidhues 710/11 Le Boudec et al. 370/234 Medard et al. 709/239 Anderson et al. 370/217 Arrowsmith et al. 340/506 Coile et al. 370/217 Planas et al. 345/735 Bader et al. 709/239	6,205,117 B1 * 6,205,563 B1 * 6,212,581 B1 * 6,215,867 B1 * 6,282,170 B1 *	3/2001 3/2001 4/2001 4/2001 8/2001	Dighe et al. 370/218 Doshi et al. 370/225 Lewis 709/223 Graf 710/18 Eslambolchi 370/221 Bentall et al. 370/225 Arrowsmith et al. 340/506